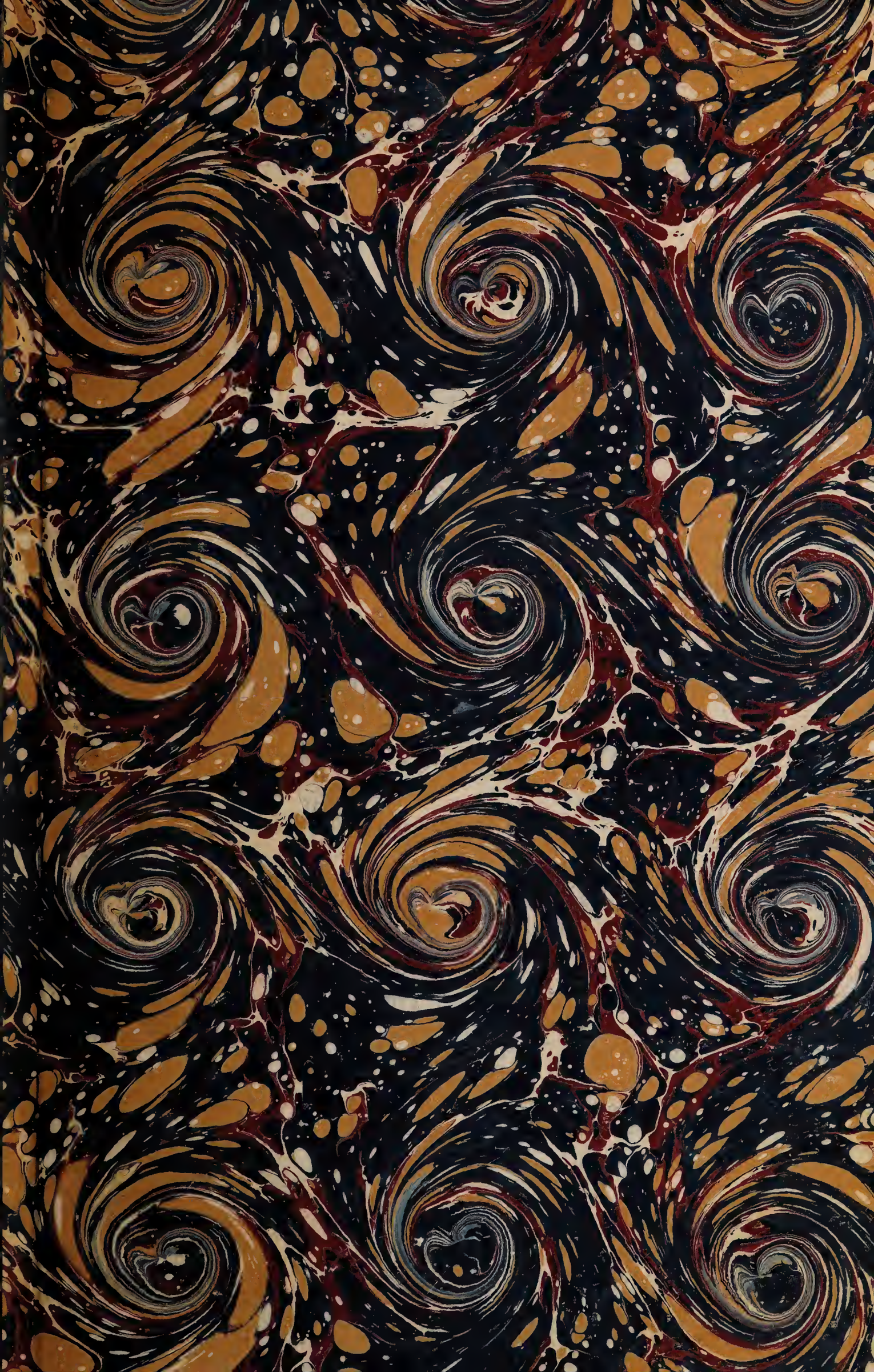

# OBSERVATIONS

ON THE EXTERNAL USE OF

# PREPARATIONS OF LEAD,

WITH SOME GENERAL REMARKS

ON

# TOPICAL MEDICINES.

BY

JOHN AIKIN, SURGEON.

*—— Sunt certi denique fines. ——*

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MDCCLXXI.

TO

JOHN FYSHE PALMER

M. D.

OF PETERBOROUGH

THESE OBSERVATIONS

ARE INSCRIBED

AS AN OFFERING OF GRATITUDE

TO PRIVATE FRIENDSHIP

AND A TRIBUTE OF ESTEEM

TO DISTINGUISHED ABILITIES

BY HIS AFFECTIONATE FRIEND

AND OBLIGED HUMBLE SERVANT

JOHN AIKIN

CHESTER, *Jan.* 1. 1771.

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P. 30. l. 13. for *rancessency* read *rancescency*.

P. 37. l. penult. for *effect* read *affect*.

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# INTRODUCTION.

THERE is in human nature an enthuſiaſm conſtantly ariſing from the purſuit of any favourite object, which in ſome meaſure prejudices the judgment of the cooleſt and moſt temperate men, and in ſpite of themſelves biaſſes their opinion, and influences their repreſentation of things. This propenſity of the mind has in no inſtances been more ſtrikingly ſhown, than in the introduction of new medicines; with regard to which it has been found, that the greateſt intentional candour and honeſty have not preſerved men from offering to the world equivocal facts, with bold concluſions deduced from them. It would be an eaſy, though invidious taſk, to point out many caſes, where practitioners have been much ſuprized to find a

remedy, powerfully recommended to them upon the authority of a great and reſpectable name, fall infinitely ſhort, in real efficacy, of what they had been taught to expect. Inſtances of this unhappy deception are more frequent, in proportion as the national or perſonal character of the author is inclined to credulity or vanity; and when we have reaſon for ſuſpecting a ſtrong biaſs to either of theſe, it becomes us to be extremely cautious and reſerved in our admiſſion even of facts, and ſtill more of conjectures. To the honour of our country, it may be conſidered as the place where the literary opinions of all Europe are weighed with the moſt candid and impartial ſcrutiny; where a great name will not ſanctify an abſurdity, nor a cloud of credulous and prejudiced atteſtations evidence an extreme improbability. This ſpirit of free enquiry, and philoſophical ſcepticiſm, can alone preſerve ſcience from being overwhelmed with a number of contradictory opinions, ſo equally recommended as to

confound

confound all diſtinctions of truth and falſehood, and can alone contribute to the aſcertaining that experimental knowledge, which conſtitutes real advancement in any purſuit of the mind.

MR. GOULARD, a ſurgeon of eminence at Montpellier, has lately written a treatiſe on the external uſe of Saturnine preparations, in which he conſiders them as a ſort of panacea in the practice of ſurgery, and makes them, in fact, the only topical remedies required in any caſe. An intelligent reader will at firſt ſight perceive an air of empiriciſm in the indiſcriminate recommendation of a medicine, for diſorders ſo very various and different as thoſe which come within the ſurgeon's province; and if, upon a further examination, he finds reaſon to ſuppoſe it really valuable for ſome purpoſes, he will wiſh to ſeparate and diſtinguiſh what may be depended upon, from the ſanguine additions of a prejudiced author. It is preciſely with this view, that I have undertaken a ſet of obſervations upon ſa-

turnine topics. Senſible that Mr. Goulard has ſaid many things in their favour which well deſerve attention, I would attempt to put theſe medicines upon the rational footing of others in common practice, and candidly ſhow what may, and what may not be expected from them, and in what rank they ſtand with reſpect to other topics; and in doing this, in whatever points I am obliged to differ from Mr. Goulard, ſo it be done with modeſty and good-temper, I cannot conſider myſelf as ſtanding in need of an apology.

I SHALL only beg leave further to premiſe, that it is not merely upon the confidence of theoretical reaſoning that I preſume to judge of this matter, but alſo upon a very extenſive and accurate obſervation of the effects of theſe medicines in real practice.

PART

# PART I.

## SECTION I.

## On the Medicinal Preparations of Lead.

LEAD is uſed medicinally, either in the form of a calx, or corroded or diſſolved by the vegetable acid.

THE calces of lead ſeem to have no active qualities. Their only uſe is to give conſiſtence to plaſters, which they are extremely well qualified for, on account of their ſolubility in oil. Litharge is chiefly uſed for this purpoſe. The London and Edinburgh Diſpenſatories afford three forms of lead combined with the vegetable acid;

CERUSSE—which is a ſimple corroſion; Sugar of lead—a cryſtalliſed ſalt; and

Acetum Lithargyrites—a ſolution by infuſion.

The baſis of Mr. Goulard's preparations is what he calls *extractum ſaturni*, which is a decoction of litharge in vinegar, and in no reſpect differs from ſugar of lead and vinegar of litharge, but in degree of concentration. It is evident from the directions given us for making it, that its ſtrength muſt be extremely uncertain, depending upon the ſtrength of the vinegar, and the time of boiling, neither of which is preciſely fixed. This circumſtance perhaps is of ſmall importance in a topical application, which though it was determinate with regard to quality, could never be ſo with regard to quantity, yet it gives us room to be ſurprized at a claim of invention and perfection, for a preparation which is neither new nor judicious. The only circumſtance in which the extract ſeems to have the advantage of ſugar of lead, appears to be in the greater quantity of the acetous acid contained in it, which proves

proves an excellent aſſiſtant in many caſes, and the ſugar of lead, when once cryſtalliſed, cannot be brought back to that ſtate of ſolution in vinegar in which it was before; yet where a large quantity of watery menſtruum is added, as in Mr. Goulard's ſaturnine water, it is as well to make a ſolution of ſugar of lead in the water, and add the vinegar afterwards, as to mix them both together in the form of extract. He has a variety of formulæ of the extract mixed with unctuous and emplaſtic ſubſtances, contrived by their different conſiſtences and ſtrength to ſuit various purpoſes. Our diſpenſatories have likewiſe two very elegant ſaturnine ointments, and a variety of ſaturnine plaſters.

ONE of Mr. Goulard's compoſitions is a mixture of the extract with ſoap, for the idea of which he profeſſes himſelf indebted to the Duc de Richlieu. This I will venture to ſay is a very injudicious formula; ſince the acid in the extract will probably unite with the alkali of

the ſoap, and leave the lead in the ſtate of an inert calx. In effect, on attempting to make this compoſition, I have ſeen a large white flaky ſediment, which I imagine was the lead united with part of the oil in the ſoap.

The ſaline preparations of lead, diſcover to the taſte a remarkable ſweetneſs, and an intenſe ſtypticity. The calces are perfectly inſipid.

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## SECTION II.

## On the Penetrability of Saturnine Preparations.

MR. Goulard, in accounting for the effects of theſe topics, ſpeaks of their minute and ſubtile particles entering the pores, forcing through obſtructions, grinding down and dividing concreted juices, and then bringing them back through the pores, and all this with as much confidence as if he had actually ſeen them at work through a microſcope. It is this licentious ſpirit of conjecture which has brought medical theory into diſrepute, and retarded the progreſs of real knowledge, ſince it is impoſſible for any opinion to be advanced, which an ingenious man may not attack or defend upon principles ſo vague and fanciful.

Let

Let it be our buſineſs to conſider, from the known laws of the animal œconomy, and the ſenſible qualities of the ſubſtance treated of, aſſiſted by analogy with others, the effects of which are better aſcertained, what is moſt likely to happen relative to the penetration of ſaturnine topics.

Absorption of fluids applied to the ſurface of the body, is a well known phenomenon. This is performed through the minute pores of the ſkin, and the mouths of a ſet of veſſels appropriated for this action, which beſides the property of capillary tubes, poſſeſs alſo a contractile power from irritation. Yet are we much too ignorant of the theory of abſorption, to form concluſions *a priori* of the ſubſtances beſt fitted to enter the ſyſtem in this way. Without embaraſſing myſelf therefore with uncertain and inconcluſive reaſonings of this kind with regard to lead, I ſhall rather attempt to eſtabliſh practical rules concerning its uſe, upon the ſurer grounds of real obſervation

on of its effects, and analogy with other medicines.

THE effects of any ſubſtance abſorbed from the ſurface of the body, and thence carried to the maſs of blood, and diſtributed with it through the whole ſyſtem, may naturally be expected to be very ſimilar to thoſe conſequent upon its abſorption from the internal ſurface of the alimentary canal. This in many inſtances has been obſerved to be real fact, and in none more eminently than with regard to mercury; a medicine which is more familiar to us, and better known from its effects, than perhaps any in the whole materia medica. Its efficacy in overcoming the venereal virus, and its diſtinguiſhing property of exciting a ſalivation, are now univerſally allowed to follow its admiſſion into the ſyſtem, through whatever channels it is conveyed, or in whatever form of combination it is exhibited; with ſome difference only as to the certainty and ſpeed with which it produces theſe effects. A long experience has at length

length triumphed over fanciful theories and intereſted pretenſions, and has eſtabliſhed it as an important and undoubted axiom, that mercury, whether internally exhibited in the form of a moſt corroſive ſalt, or rubbed into the ſkin combined in its crude ſtate with the mildeſt unctuous ſubſtance, acts preciſely in the ſame manner on the animal fluids. Experiments of this kind with regard to other medicines are not numerous, nor very well aſcertained, but in ſeveral inſtances the reſult has been the ſame. Even ſome purgatives, which one would ſuppoſe confined to a topical action upon the inteſtinal canal, have been found to produce their effects from external application.

The noxious effects of lead taken into the ſtomach, are extremely well defined and authenticated. The ſymptoms it occaſions are certain and conſtant, and though at firſt they indicate a partial affection of the inteſtinal canal, yet the general paralytic diſorders ſupervening, ſhew a communication of the injury through-

throughout the ſyſtem. But this is not the only method of exhibition by which its poiſonous property is ſhown. The workers in lead-mines are found to be extremely ſubject to the paralytic affections, and general diſorders of the nerves, which diſcover the ſaturnine poiſon; and in them the particles of lead muſt probably be received, in combination with a ſulphureous vapour, into the lungs. This ſeems alſo to be the caſe with reſpect to plumbers and ſome other artificers in lead. There is ſome doubt concerning the manner in which painters receive the poiſon; ſince if we conſider the adheſive quality of the compoſitions of lead uſed for paint, and the little care theſe people take to keep their hands clean, we may eaſily conceive that a conſiderable quantity may be ſwallowed along with their food; however, vapour has probably ſome ſhare, as the ſmell of a newly painted room has been known to occaſion theſe diſorders in a ſlight degree.

THUS we recognize two ways, in which particles of lead received into the ſyſtem produce noxious effects which are evident and diſtinguiſhable; and from analogy we might very naturally imagine, that ſimilar conſequences would follow its application to the ſurface of the ſkin. But Mr. Goulard, though he is very ſanguine in his idea of the powerful action of lead abſorbed in topical application, is yet ſtrenuous in maintaining that its moſt liberal external uſe is never attended, in the ſmalleſt degree, with any of the pernicious effects of its internal exhibition. He confirms his own extenſive experience by that of others; and from a large and careful obſervation of its effects, I can add an unreſerved teſtimony to this fact. I have ſeen numerous inſtances where his ſaturnine preparations were uſed for a length of time, in large quantity, and in all the circumſtances which could be ſuppoſed to favour its abſorption, without any of the ſymptoms attending its admiſſion into the ſtomach or lungs. What

are

are we to conclude from an event ſo unexpected? Would it be too much, to make uſe of it as an argument that no abſorption of the ſaturnine particles really takes place? might not this ſuppoſition be corroborated, by conſidering the remarkable ſtyptic quality of lead, which ſeems to contract and ſhrivel up every fibre, and certainly muſt render the pores leſs capable of abſorbing? This perhaps would be too haſty a concluſion, ſince our ignorance of the real operation of medicines, and the cauſes of the variety obſervable in their effects, renders the argument rather merely negative than poſitive. Yet I think we may ſafely aſſert, that it entirely deſtroys Mr. Goulard's analogy of lead with mercury, and the theory of its action founded thereupon; for certainly he has no right to avail himſelf of the activity of a medicine in a favourable conſideration of it, whilſt he denies thoſe noxious effects by which its activity is diſcovered.

THERE is a farther conſideration which may ſerve to invalidate Mr. Goulard's opinion, that ſaturnine topics act from an intimate penetration of their particles. In many of the caſes in which he celebrates their virtue, the diſeaſe is deeply ſeated in the muſcles, glands, and cellular ſubſtance beneath the ſkin. Now the lymphatic veſſels, which have been almoſt demonſtrated to be the canals by which all abſorption is carried on, and have been very accurately traced, by ſeveral great anatomiſts, particularly Hunter, Monro, and Hewſon, are found, as far as injection can be puſhed, to have little or no connexion with the parts immediately ſubjacent, but to run on in a direct courſe to the next conglobate gland; and the progreſs of ſome diſeaſes, and effects of various ſtimulant applications, have aſſiſted to trace out this courſe. Admitting therefore that particles of lead in an active ſtate may be abſorbed, yet if inſtead of pervading and ſoaking through the ſkin and cellular membrane by tranſudation,

ſudation, they are carried directly and ſuperficially along the lymphatic veſſels, it cannot be conceived that they can produce any other effects on deep-ſeated parts, than ſuch as ariſe from a ſympathetic communication by means of the nerves. To give this argument its full force, we need only have recourſe to the numerous facts relative to abſorption, related by the favourers of the lymphatic theory.

UPON the whole, I conceive it a method much leſs expoſed to doubt and uncertainty, and conſequently much more uſeful in a practical view, to form our judgment of the uſes of ſaturnine topics, from their ſenſible and primary effects upon the parts with which they immediately come into contact, than from a theory of the intimate penetration of their particles; a theory which muſt be merely hypothetical, ſince we are confeſſedly deprived of aſſiſtance from the analogy of their internal action. I ſhall therefore proceed upon this principle, endeavour-

ing to elucidate and confirm obſervations of the real effects of theſe medicines, by a theoretical reaſoning, ſimple and intelligible; which however I would willingly include in that modeſt apology of Tully: *Nec tamen quaſi Pythius Apollo, certa ut ſint, et fixa, quæ dixero; ſed ut homunculus unus e multis, probabilia conjectura ſequens.*

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## SECTION III.

## On the primary Effects of Saturnine Applications.

THE moſt manifeſt effect of ſaline preparations of lead externally applied, is contraction of the fibres. An animal fibre is capable of being ſhortened or contracted in two different ways; either from the property common to all matter of its particles being brought nearer to each other by external cauſes, or from an internal power of action reſulting from the vital principle.

THE firſt ſpecies of contraction is produced by *aſtringents*, which exert their efficacy equally on dead and living fleſh. The ſecond is excited by *ſtimulants*, for the operation of which the vital principle is neceſſary. Theſe powers may exiſt ſe-

parate from each other, or they may be united. In general, moſt of the medicinal applications belonging to either of theſe claſſes, which we are acquainted with, unite in various proportions a ſtimulant and aſtringent quality.

THERE is no doubt concerning the *aſtringency* of lead. The ſenſes bear a ſufficient teſtimony to this effect.

WHETHER or no it has a *ſtimulating* quality is much more dubious.

IN order to conſider this queſtion more clearly, we muſt premiſe, that there is a great difference between impreſſing the nerves with an immediate ſenſation, and rendering them more ſuſceptible of impreſſions. Many ſubſtances produce the firſt effect in a great degree, and yet totally deſtroy the latter. All ſaline bodies without exception applied to the tongue, or to any part diveſted of the cuticle, prove immediately ſtimulant, yet their effect may be afterwards to render the part leſs ſenſible of another ſtimulus. A ſaline preparation of lead, applied in a concentrated form to a very ſenſible part, will

will therefore ſtimulate the fibres to immediate action, yet there is great reaſon to believe that its laſting effects will be quite oppoſite.

THE ſymptoms ariſing from the internal uſe of lead, all ſhow a remarkable power in deſtroying nervous influence. The obſtinate conſtipations, tremors, and paralytic affections conſequent upon it, proceed from this cauſe. Yet in what degree its external application can produce this, is very queſtionable. Mr. Goulard ſpeaks, in many places, with great applauſe of the ſedative virtue of ſaturnine topics; and indeed the facts related ſeem fully to juſtify what he ſays on this head. At the ſame time, he no where allows of any bad effects ariſing from the deſtruction of nervous influence, ſuch as palſies, and the like; nor have I ever obſerved their freeſt application attended with any ſymptoms of that kind. But how can we conceive that juſt ſo much power is exerted as to prove beneficial, and that it never proceeds to be injurious? I apprehend nothing can ac-

count for this, but what was before laid down concerning the confined action of theſe topics. We may eaſily imagine, that by diminiſhing the ſenſibility of the nerves of the ſkin they may appeaſe pains ſeated there, while, not being able to penetrate to the nerves ſupplying the muſcles, they cannot affect the moving powers of the body.

THE *antiſeptic quality* of ſaturnine topics is alſo celebrated by Mr. Goulard. Putrefaction in a living body may be reſiſted, either by ſuch applications as ſtimulate the moving powers to a more vigorous action, or by ſuch as have a chemical property of checking this proceſs in the animal ſolids and fluids. Every combination of a metallic body with an acid is chemically antiſeptic, ſo that in this view the extract of ſaturn will rank among this claſs of medicines; though did its ſedative quality penetrate conſiderably to the moving powers, it would produce an oppoſite effect with reſpect to them. Simple aſtringency however is found to render a body leſs liable to putrefaction;

trefaction; ſo that upon the whole we may expect a good degree of antiſeptic power from ſaturnine topics, eſpecially the ſaturnine water of Mr. Goulard, which has a portion of vinous ſpirit added to it.

SATURNINE preparations outwardly applied, appear therefore to exert an aſtringent and antiſeptic property on the ſimple ſolids and the fluids they come into contact with, and a ſedative property on the living ſolids; and this, as far as I am able to judge, ſeems to be the whole of their primary action. The ſecondary effects reſulting from theſe, particularly with regard to the motion of the fluids, will be hereafter treated of.

IT is to obſerved that a difference will ariſe in the effects of ſaturnine water, according to the degree of heat in which it is applied. This is referable to the effects of ſimple heat and cold; with regard to which it is univerſally known that heat relaxes, and cold conſtringes the fibres—the former applied in a moderate degree will therefore aſſiſt its ſedative, the latter its aſtringent property.

## SECTION IV.

## On the Repellent Quality of Saturnine Topics.

MR. Goulard very copiouſly inſiſts on the efficacy of lead in diſcuſſing tumours of every kind, and even abceſſes after the matter is formed, and in diſperſing eruptions; yet he takes great pains to prove, or rather indeed to affirm, that it has no *repellent quality*. As this poſition ſeems ſomewhat paradoxical, and he has by no means cleared up the paradox, it may be uſeful to make ſome general obſervations upon Repellents and Diſcutients.

IN every tumour there is a præternatural congeſtion of fluids, which may be faulty, either from the too great quantity in which they are collected, or from a mor-

a morbid affection added to this. In the firſt caſe, no bad conſequences can enſue from cauſing them to re-enter the circulation, and flow in their natural courſe; but in the latter, throwing back a vitiated humour on the blood, from whence an effort of nature has ſeparated it, may give riſe to diſorder in other parts of the ſyſtem.

IN either caſe, the congeſted fluids ſeem to have no other poſſible way of eſcaping, but by an external diſcharge, or by a return into the circulating maſs; which laſt, if terms mean any thing, muſt certainly be underſtood by the word *repulſion*. Mr. Goulard has therefore done nothing towards the proof of his favourite poſition, that lead does not repel, by ſuppoſing its particles capable of penetrating to the fluids in a tumour, and producing great changes in their texture and properties; ſince, if after all they re-enter the circulation, they are ſtill repelled; and no advantage is gained with reſpect to the dreadful idea of repulſion,

except

except it were proved that their vitiation was corrected by the ſaturnine particles, and conſequently the repulſion rendered innocent.

He has indeed related, what I believe will appear very extraordinary, and ſcarce credible to moſt ſurgeons, that in an abceſs where matter was evidently formed, the application of a ſaturnine cataplaſm has evacuated it externally by way of tranſudation through the pores of the ſkin, ſo that the dreſſings were moiſtened with real pus, and the abceſs gradually vaniſhed without opening. This phœnomenon, ſo contradictory to what we know of the nature of abceſſes, and the operation of medicines, merits a ſtronger confirmation, than a few caſes in which the fact ſeems rather to have been taken for granted, than clearly demonſtrated. It may indeed eaſily be conceived, that a powerful ſtimulant or aſtringent may repel into the blood the matter of an abceſs; and we find this ſometimes naturally happen in caſes of Metaſtaſis,

Metaſtaſis, though the event is rare where the pus is fully formed; but if it were poſſible for a tranſudation to take place, we ought rather to expect it from emollient applications, which powerfully relax the ſolids and dilute the fluids, than from topics which have a manifeſt aſtringent quality. The cuticle, while entire, we know is capable of retaining the ſerum of a bliſter, a fluid of far greater tenuity than pus. Mr. Goulard's theory to account for this effect of Saturnine topics, is ſo very artificial and improbable, that it does not deſerve a refutation.

HE does not however pretend that this tranſudation commonly happens in the diſperſion of a tumour; therefore, as its contents uſually find an internal iſſue, that is, return into the circulation, they are in every true ſenſe of the word, *repelled*, and obſervations accumulated to prove the ſtrong *diſcutient* quality of lead, do in effect prove its *repellent* quality.

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The ſame reaſoning will hold good with regard to eruptions, which like tumours contain a congeſted fluid, either innocent or morbid. The powerful effects of lead in cauſing theſe to diſappear, have long been well known, and much dreaded. Mr. Goulard may have proved that the uſe of lead is ſafer than has been imagined; but certainly he has not ſhown, that when eruptions which roughened the whole ſurface of the body, ſuddenly diſappear without any viſible external diſcharge, they are not repelled.

He brings an obſervation from the cure of the itch, to ſhow that lead is not repellent; which is, that upon its firſt application, the eruptions are increaſed inſtead of being diminiſhed. It is very extraordinary that in his long chapter on this diſorder, not one word is mentioned of the prevailing opinion among medical writers that the itch is occaſioned by animalculæ; an opinion apparently well founded, and, one would imagine, univerſally known. But this circumſtance

rendered

rendered the inſtance much leſs fit for his purpoſe, ſince it deſtroys the analogy with morbid matter in general, and gives room to account for the fact in a different way.

UPON the whole, conſidering the number of well ſtated facts adduced by Mr. Goulard, of the diſperſion of tumours and eruptions by Saturnine applications, where no bad conſequences have enſued from throwing back the matter on the ſyſtem; we muſt conclude, either that lead has a remarkable property of deſtroying various noxious qualities in the fluids; or that our opinions concerning ſuch noxious qualities, are erroneous and ill-grounded.

THE firſt ſuppoſition is rendered improbable, by the arguments before laid down againſt the penetrability of Saturnine topics. Nor can it be conceived, allowing them to mix with the fluids, how by a ſort of miraculous power they are able equally to prevail againſt almoſt every

every kind of vitiation of which the fluids are capable.

On the other hand, ſeveral caſes of tumour and eruption, preſuppoſe no noxious quality in the fluids, and conſequently we have no reaſon to apprehend any bad effects from cauſing them to reenter the circulation; and from many facts that have appeared ſince the modern changes of practice in the treatment of the ſmall-pox and other eruptive fevers, which have ſhown that cuticular eruptions are rather a ſymptom, than a neceſſary criſis of theſe diſorders, and that ſuch a treatment as is calculated rather to check than to promote them, will render the diſeaſe milder and leſs dangerous, we have great reaſon to believe that the repulſion of fluids uſually ſuppoſed to be vitiated, will not always produce thoſe fatal conſequences that have long been ſo much dreaded.

There is no occaſion therefore, by imaginary hypotheſes induſtriouſly to conceal

ceal the real action of lead, or to change the term by which its action ſhould be ſpecified; ſince, if its utility and innocence be clearly proved by facts, calling it a *repellent* will not, in this country at leaſt, deter practitioners from making uſe of it.

## SECTION V.

## On Emollient Topics.

MANY of the diſeaſes for which Mr. Goulard recommends his medicines, are ſuch as have been uſually treated with emollient applications; againſt which he brings very ſevere charges, and ſeems deſirous of totally baniſhing them from the practice of ſurgery. The difference between theſe two claſſes of topics is ſo great, that it is impoſſible the uſe of both in ſimilar caſes can be generally proper. I ſhall therefore examine the nature and properties of Emollients, in the ſame manner as I have done thoſe of Saturnine preparations, in order to bring them to a compariſon.

EMOL-

EMOLLIENT TOPICS are ſuch as relax the ſolids, and oppoſe acrimony in the fluids.

THIS ſeems to be the whole of their action, primarily conſidered.

THE ſubſtances which enter the claſs of emollients, are water, oil and mucilage.

WATER is abſorbed with great facility from the whole ſurface of the body, and either in its liquid form, or that of vapour, is poured out into every cavity, and moiſtens every fibre. If we imagine a ſpongyneſs or poroſity of texture in the ſimpleſt fibre of the human body, we may conceive how particles of water ſoaking into it may have a mechanical effect of enlarging its bulk, and conſequently of relaxing it. Water when warm may alſo contribute to relaxation by being the vehicle of heat, which is more intimately and conſtantly applied to the body through its medium than that of air.

WATER is the moſt univerſal diluter poſſible of the animal fluids, ſince with

the aſſiſtance of heat, it may be united with almoſt all of them; conſequently it is a powerful oppoſer of acrimony.

The effects of oil in relaxing the ſolids are univerſally known and acknowledged. It ſeems to perform this office by abſorption into the ſubſtance of the ſolid fibre. It is alſo capable of mixture with many of the fluids, on which it will act as a diluent and ſheather of acrimony. Oil is not liable to evaporation or coagulation from a moderate heat; it is however ſubject to a ranceſſency and putrid acrimony from warmth and ſtagnation.

Mucilage is leſs capable of abſorption than the other two, and requires diffuſion in a large portion of water to enter the pores and ſmall veſſels. It ſeems peculiarly adapted to cover acrimony in the fluids, by its remarkable ſheathing or obtunding property.

As moſt of the fluids in the body contain a portion of oil and mucilage united by means of water, it ſeems probable that an artificial mixture of this kind, would be

be beſt calculated for anſwering every purpoſe of an emollient. In the proportions we ſhould allow a larger ſhare to water than to mucilage, that it may be well fitted for abſorption. Its application ſhould be aſſiſted by a warmth ſomewhat greater than that of the human body, and by gentle friction. An impure oil obtained from ſome animal ſubſtances by means of heat, ſuch as neats-foot oil, is a mixture of this kind, and is celebrated as a peculiarly excellent emollient. The ſynovia of the joints is a liquor of this ſort, prepared by nature as the beſt fitted for counteracting the injurious effects of violent friction.

I SHALL now conſider the ſecondary effects reſulting from the primary action of emollients.

EMOLLIENT applications are

1. SEDATIVE. WE may ſuppoſe pain to be owing either to an exceſſive tenſion of the ſenſible fibres, or to a chemical acrimony corroding them. The following example will ſerve to illuſtrate both

theſe cauſes of pain. If a puncture be made in a tenſe membranous part, a violent and continued pain will be produced, which muſt be owing to an unequal tenſion of the nerves, proceeding from a partial diviſion; for compleating the diviſion by a free inciſion will remove the pain.

But ſuppoſe this puncture be made by the bite of a viper or ſome other venomous animal; here is not only the former cauſe of pain, but a new one ſuperadded, which is, the corroſive matter introduced; and the ſame treatment will not give relief. Emollient topics, by relaxing the ſolids and oppoſing acrimony in the fluids, are calculated to remove both theſe cauſes of pain, and therefore are moſt truly ſedative.

The relaxation occaſioned by emollients is found not only to remove the painful tenſion of the parts to which they are immediately applied, but from the univerſal ſympathy of the nerves throughout the body, to relieve pain in a diſtant

and

and deep ſeated part. Thus we find that the warm bath is the moſt powerful ſedative in nature.

UPON the ſame principles, emollients have a claim to the title of

2. ANTISPASMODIC. SPASM and pain very frequently accompany each other, and proceed from the ſame cauſes. Whatever relaxes and appeaſes irritation muſt prove truly antiſpaſmodic, not only to the part in contact with it, but to a diſtant one by ſympathetic communication.

A CONTINUANCE of the relaxing power will cauſe emollients to prove

3. DEBILITATING. IN a natural ſtate of the fibres, there is that due degree of tenſion, which enables them to contract in ſuch a manner as to act with the greateſt poſſible advantage. When they are lengthened by relaxation, it is obvious that the ſame contractile force cannot produce equal effects; as part of the power will be loſt, in bringing them firſt to their natural degree of tenſion. All

motion therefore being produced by the contraction of muſcular fibres, whatever impairs their contractile power, weakens the moving powers of the body.

THIS debilitating quality of emollients, when applied to a part overloaded by congeſted fluids, will certainly render it leſs able to free itſelf by a valid contraction of the fibres; on the contrary, the veſſels by relaxation will become capable of admitting a larger quantity of fluids, and conſequently their determination to the part will be increaſed. Further, the facility with which emollient liquors are abſorbed and aſſimilated with the animal fluids will ſtill augment their quantity.

FROM theſe conſiderations it would ſeem quite erroneous to attribute a *diſcutient* power to emollients; at leaſt in any other view than as they may render hardened and coagulated juices more fluid and fit for circulation: but this is only a preparatory action, and it will be ſtill requiſite to give the veſſels that due tone

and

and elaſticity, which may enable them to get rid of their contents. It may indeed be alledged that warm emollients, by ſoftening the ſkin and opening its pores, will facilitate the exhalation of the contained fluids. But whoever will attend to the nature of oily and mucilaginous ſubſtances, muſt perceive that by entering the minute pores of the ſkin, and mouths of the exhalant tubes, they will rather tend to block up the accumulated fluids, than to promote their diſcharge. And this is confirmed by experiment. Let an emollient poultice compoſed of a mucilaginous farina, oil, and an aqueous fluid, be applied to the unbroken ſkin over a tumour; in a few hours it will be found that inſtead of acquiring additional moiſture, it will have loſt moſt of what it had, by abſorption.

FROM what has been ſaid it appears, that emollients have a much better claim to be conſidered as

4. SUPPURATIVE. SUPPURATION is produced by a kind of diſſolution and fer-

mentation of the ruptured ſolids with the extravaſated fluids. It is evident that whatever increaſes the congeſtion of the latter, and weakens the texture of the former, muſt contribute to this effect; which will alſo be further promoted by emollients as they are

5. Septic. The heat employed in the uſe of emollient applications will tend to increaſe putrefaction, when there is otherwiſe a prediſpoſition to it; and the accumulation of the fluids, and debilitation of the ſolids will frequently give this prediſpoſition. The tendency of oily ſubſtances to acquire a rancidity and putrid acrimony has before been remarked: this is very apparent when they are mixed with the purulent diſcharge of an ulcer, and greatly tends to promote and increaſe putrefaction. Upon this principle it is that thoſe caries of bones, where the medullary oil is affected, become ſo peculiarly and intolerably fœtid.

On a compariſon between emollient and

and ſaturnine topics, we ſhall now perceive the great difference between them.

PREPARATIONS of lead are—aſtringent, diſcutient and antiſeptic.

EMOLLIENTS are—relaxant, ſuppurative and ſeptic.

THEY both appear to be ſedative, but the firſt from ſome occult quality, which for want of a more explicit term we muſt call ſpecific, tending to deſtroy nervous influence; the ſecond by an action which leſſens the cauſes of irritation, but does not effect the ſuſceptibility of the nerves to receive impreſſions.

# PART II.

I SHALL now proceed to conſider ſome of the particular diſorders, in which ſaturnine topics are recommended by Mr. Goulard, and compare their effects with thoſe of emollients, and other applications in common uſe.

## SECTION I.

### On Inflammations.

SO large a ſhare of the practice of ſurgery may be comprized under the head of inflammations, that to treat the ſubject fully would much exceed the limits I would preſcribe to this work. I

ſhall

ſhall therefore only endeavour to lay down ſome general rules concerning topical applications in theſe caſes; which may be done the more freely, as inflammations, from whatever cauſe they proceed, have ſuch a general ſimilarity with regard to their ſeveral ſymptoms, ſtages, and terminations, that any peculiar mode of treatment will apply more univerſally than might at firſt be imagined.

I SHALL not here pretend to enter into a theoretical diſcuſſion of the proximate cauſe of inflammation: nothing has been more variouſly accounted for; and in all probability it is intimately connected with thoſe operations of the minuteſt parts of the body which we are at preſent, and perhaps ſhall ever remain ignorant of. A careful attention to the ſymptoms and appearances, will prove a much better direction to our practice, than the moſt ſubtle hypothetical reaſoning.

THE ſymptoms of every inflammation, are, a painful tumour, with increaſed heat, redneſs, and ſenſibility.

THESE

THESE plainly ſhew, a congeſtion of fluids, a more frequent action of the moving powers, and a violent ſtate of the nerves diſpoſing them to communicate ſenſation in too great a degree.

INFLAMMATION muſt terminate, in reſolution, ſuppuration, or gangrene. Schirrus is juſtly conſidered by ſome late writers rather as a peculiar diſeaſe, than as a termination of inflammation.

1. RESOLUTION. AN inflammation is ſaid to be reſolved, when the ſymptoms go off gradually, and leave the part in the ſame ſtate in which it was before the diſeaſe took place. This is therefore the termination always to be preferred, unleſs the inflammation has been produced by morbific matter, which we chuſe to diſcharge externally.

MR. Goulard very juſtly obſerves, that emollient topics are in great meaſure contrary to the indications that are to be fulfilled in reſolving an inflammation. The tumour owing to accumulated fluids, muſt be increaſed by applications which add

add to their quantity, and at the ſame time render the veſſels more yielding to their impulſe, and leſs able to carry them off.

THE increaſed action of the veſſels, and ſenſibility may ſeem indeed to require the ſedative power of emollients; but as whatever augments the tumour muſt add a cauſe of pain and heat from the tenſion of the ſenſible parts, emollients will in this view counteract their own effects.

SATURNINE topics, on the other hand, ſeem peculiarly calculated to anſwer every indication of a reſolvable inflammation. The aſtringent and ſedative properties combined, tend to give a tone to the fibres, and make the veſſels capable of emptying themſelves, and at the ſame time to moderate the increaſed motion and ſenſation. From numerous inſtances that have fallen under my own inſpection, and from Mr. Goulard's multiplied obſervations, I make no queſtion of the efficacy of ſaturnine above emollient topics

pics in procuring reſolution; I have only ſome doubts concerning the preference due to ſaturnine preparations, above the ſimple aſtringents and ſtimulants in common uſe.

IT may be remembered that the ſpecific ſedative property in lead outwardly applied was ſuppoſed to act very ſuperficially, principally from this argument, that no bad conſequences to the nervous influence in general were ever obſerved to attend its uſe. Now if we imagine the pain and ſenſibility of an inflammation to be ſubſequent to the formation of the tumour, and owing chiefly to the tenſion occaſioned by a congeſtion of fluids, it will follow that the ſedative virtue of ſaturnine topics in this caſe may be beſt accounted for, merely from their aſtringent quality; and conſequently that other aſtringents, and even ſtimulants will likewiſe prove ſedative. This opinion is rendered probable by the ſucceſs attending aſtringents and ſtimulants in the moſt painful inflammations, ſuch as thoſe attending

tending burns, in which even rectified ſpirit of wine is often applied with relief.

The ſwelled teſticles frequently accompanying a gonorrhea will very well illuſtrate the effects of emollient, ſaturnine, and common aſtringent and ſtimulant topics. Theſe uſually come on very ſuddenly, increaſe to a large bulk, and are extremely painful and ſenſible to the touch. The preſent practice of applying an emollient poultice indiſcriminately to every kind of inflammatory tumour, has given me, and (I ſuppoſe) almoſt every ſurgeon, frequent opportunities of obſerving the effects of theſe topics: and I will venture to appeal to the experience of any practitioner, whether ſuch a treatment does not always prove extremely tedious, painful and confining; and whether the cure is not generally incompleat, a conſiderable hardneſs of the epidydymis remaining perhaps for life. Saturnine applications have been uſed in theſe caſes with great ſucceſs. I have ſeen the ſaturnine water made pretty ſtrong,

ſtrong, applied cold, and aſſiſted by proper poſture and bandage, remove the tumour and pain in a ſhort time, and duly continued, take away all hardneſs. Common aſtringent and ſtimulant applications have alſo been recommended, and I once had a ſtriking inſtance of their efficacy. A perſon ſuddenly attacked in the morning with a ſwelled teſticle, was obliged on account of neceſſary buſineſs to walk about all that day. I applied a folded handkerchief well ſoaked with rum to the part, retained by another tied round the body. This was wetted twice or thrice during the day, and at night I found, notwithſtanding his exerciſe, that the bulk was greatly reduced, and the pain and ſenſibility diminiſhed. This application, with the addition of vinegar, was continued ſome days longer, and the part perfectly recovered without any confinement to the patient. I have heard a juſtly celebrated profeſſor adviſe the emollient method in theſe caſes, and condemn the uſe even of camphor as too

ſtimulating; but ſuch a caſe as this, and many ſimilar ones that are to be met with in practice, would prove, to me at leaſt, a ſufficient aſſurance againſt any ill conſequences that might be apprehended theoretically from the uſe of this claſs of topics in inflammatory tumours; and I am well convinced that emollients are peculiarly ill calculated for the reſolution of inflammations of lax glandular parts, while medicines pretty ſtrongly ſtimulant may be applied with great ſafety and advantage. Where the part has not much ſenſibility, as in ſcrophulous tumours of the lymphatic glands, repeated experience has ſhown, that a bliſter is the moſt efficacious of all topical remedies.

Amongst thoſe inflammations, of which art ſhould be particularly ſolicitous to procure the reſolution, are the eryſipelatous. Mr. Goulard has, in an able and ſtriking manner, ſhewn the abuſe of emollients in this point of practice. The corroding inflammation ſpreading along the ſkin, will moſt certainly be increaſed by all

all relaxing topics; and the acrimony of the diſcharge, frequently tending to gangrene, will be aggravated by the ſeptic quality of oily and greaſy application. Theſe caſes have indeed been long conſidered by many as exceptions to the general uſe of emollients, on account of the particular dread of a ſuppuration; and thereby a ſtrong though involuntary teſtimony was given, that ſuch topics were by no means to be depended upon to procure a reſolution. The ſaturnine water by its mild aſtringency, its ſedative and antiſeptic quality, ſeems peculiarly adapted to this diſeaſe; and I have been witneſs to its good effects. Yet, though there is no doubt of its power to cure an eryſipelatous inflammation, I would not mean to anſwer for the internal bad conſequences which may ſometimes proceed from its repellent quality. Where the eryſipelas is occaſioned by external injury, and is not preceded by, or attended with diſorder of the ſyſtem in general, it is a mere local complaint, and no danger, I

imagine, can ariſe from repellent applications; but where it ſeems to be a critical effort of nature to throw off ſomething pernicious, and ſenſible relief is found from it, great caution may be neceſſary in its external treatment. Faithful obſervation can alone determine, how far we may venture the uſe of ſaturnine topics, or others of a like nature, in this caſe.

2. SUPPURATION. THERE are various caſes in which the reſolution of an inflammation cannot poſſibly be effected. This may happen in the moſt ſimple cauſe of inflammation, external injury, which may be ſo violent and attended with ſuch deſtruction of the ſolids, that ſuppuration or mortification muſt be the conſequence; but will more particularly be the caſe in ſuch inflammatory tumours as are owing to the depoſition of morbific matter, as thoſe attending malignant and variolous fevers, the venereal lues, &c. In theſe caſes the cauſe of the inflammation, exiſting in the fluids, cannot be removed without immediately correcting their

their peculiar acrimony, or giving them a diſcharge; and the firſt can very rarely be effected ſoon enough to ſtop the progreſs of an inflammation.

IT may, I think, be laid down as a rule in practice, that, when from the nature of the caſe, reſolution ſeems impracticable, we ſhould uſe no endeavours to attempt it, but immediately employ ſuch means, as are moſt likely to promote a ſpeedy and favourable ſuppuration. Reſolution and ſuppuration are entirely different operations of nature. In the firſt, the ſolids are preſerved entire, the fluids return to their uſual courſe of circulation, and the inflamed part comes to its former ſtate without ſuffering any change. The indication here is obviouſly, to aſſiſt nature by ſuſtaining the tone of the ſolids, and leſſening the determination of fluids to the part. In ſuppuration, on the other hand, the ſolids are ruptured, the fluids are extravaſated, and undergoing a fermentation with the broken fibres, procure themſelves an evacuation by puſhing outwardly

wardly through the teguments. Here, the indications are, to dilute and ſoften the fluids, that the pus formed may be bland and free from irritation, and to relax the ſolids that they may yield kindly, and without violence. Now this is the very action of emollient topics; and I cannot diſcover upon what principles Mr. Goulard recommends ſaturnine applications in theſe caſes, which do not ſeem to anſwer any one indication. In effect, nothing can have a greater ſanction from practice, than the application of warm emollient fomentations and cataplaſms in ſuppurating tumours. The eaſe and comfort they procure, and the favourable digeſtion and maturation of the pus, ſpeak ſo ſtrongly in their favour, that no prevailing faſhion in medicine will probably ever ſuperſede their uſe. Indeed, if the plan of reſolution be carried ſo far as to attempt the diſcuſſion of tumours not only tending to ſuppurate, but containing pus actually formed, if it be found that ſaturnine topics will effect this, and

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that no bad conſequences will enſue from ſuch a practice; I would willingly join with Mr. Goulard in ſparing my patients the pain of a wound, and the deformity of a ſcar. But referring to my own experience of theſe remedies, and to the nature of the caſe itſelf, I am almoſt convinced that ſuch an event would ſo ſeldom happen, as by no means to authoriſe a change of common practice. Can it be conceived from what we know of the nature of inflammation, after a violent injury, a ſevere ſymptomatic fever attended with pathognomic ſhiverings, the ſure ſigns of forming matter; when the ſolids are ruptured, and the fluids extravaſated and changed in their nature, that all this miſchief can be repaired, and every thing brought into a natural ſtate, by any external application whatever? I have no doubt that the proper means to effect a reſolution, will frequently prove ſucceſsful beyond what common practice has given us reaſon to expect; but the diſcuſſion of a conſiderable and well matured ſuppu-

ration, is a phœnomenon that requires a weighty atteſtation indeed to make it credible.

In abceſſes proceeding from morbific matter, practitioners in general would be averſe to reſolution, could it be obtained; and the remarkably good effects to the conſtitution often attending ſuch critical depoſitions, juſtify their caution in this reſpect. Indeed where we can charge the ſyſtem in general with a certain antidote to the virus, as in the caſe of venereal buboes, it may be worth while to ſpare a delicate patient the pain of opening an abceſs; though even in this caſe I believe a prudent ſurgeon would rather wiſh he was allowed to promote the diſcharge that nature has pointed out, than hazard the effects of morbid matter ranging at large through the ſyſtem. It is too like letting the lion in at the door, in order to turn him out again. It is to be obſerved that moſt of the inſtances related by Mr. Goulard of the reſolution of a maturated abceſs, are in caſes of venereal

nereal buboes; in all of which the uſe of mercurial frictions was ſubjoined. Now it is a fact well known, that theſe tumours will frequently diſappear without any external application whatſoever, when the virus is overcome by the introduction of a ſufficient quantity of mercury into the ſyſtem.

WITH regard to large wounds, violent contuſions, and other conſiderable injuries, where there is no probability of bringing about a cure by the firſt intention as it is called, that is without ſuppuration; it is I believe univerſally allowed by the beſt ſurgeons, that this operation of nature ſhould be promoted, and not retarded. Emollients therefore ſeem plainly indicated, and are in general uſe. The ſame may be ſaid of all artificial wounds made in ſurgical operations, in which a kind and ſpeedy maturation is always conſidered as the moſt favourable ſymptom. I do not therefore underſtand what Mr. Goulard would attempt by the uſe of ſaturnine water as a *defenſative* af-

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ter the great operations; or upon what principles he would uſe it as a lotion for freſh wounds. Very contrary to this is the practice, ſucceſsfully followed in ſome of the London hoſpitals, of applying a large emollient poultice immediately after amputations; and in my opinion much better calculated to prevent the acceſs of a violent ſymptomatic fever. There ſeems to be a conſiderable analogy between the application of aſtringent topics, and tight bandage, in theſe caſes. Both reſtrain the fibres from gradually yielding to the impulſe of the fluids, and diſturb the natural progreſs of that inflammatory tumefaction, which always precedes a kindly ſuppuration. The one is now univerſally baniſhed from practice, and the other, upon the ſame principles, will not probably obtain admiſſion.

3. With regard to the third termination of inflammation, gangrene or ſphacelus, it is the buſineſs of art never to promote, but always to oppoſe this event; yet as it is ſometimes inevitable, the

the ſurgeon will be required to limit its progreſs, and prevent its fatal conſequences. In order to direct our practice in this point, a conſideration of the cauſe and particular ſtate of the diſeaſe is neceſſary; for the want of which an indiſcriminate and empirical treatment has too much prevailed. Mr. Kirkland has contributed a good deal to eſtabliſh this upon a proper footing, by pointing out the diſtinction of gangrene from an internal, and from an external cauſe.

WHEN the violence of an external injury has totally deſtroyed the organization of the living fibres, all the part thus affected may be conſidered as dead fleſh; and this ſtate, to which the term *mortification* may be properly applied, is not conſequent upon, but preceding inflammation. It is the ſpreading gangrene which muſt be regarded as one of the terminations of inflammation; and this is produced by a putrefaction generated in the mortified fleſh, and communicating its ferment to the ſurrounding part. The indications

indications to prevent or limit the progreſs of a gangrene from this cauſe, are therefore ſeparation of the dead fleſh, or checking the putrefactive fermentation in it. The firſt, if not performed by an operation, ſeems moſt likely to be effected by emollients; for the relaxation of the ſolids, brought on by their uſe, aſſiſts the action of the uninjured fibres in puſhing off the dead parts. Yet ſince emollients have a tendency to promote putrefaction, their uſe may be prejudicial with regard to the other part of the indication, unleſs care is taken to ballance this effect by a proper mixture of antiſeptics. Practice therefore has rightly introduced the application of warm poultices compoſed of farinaceous ſubſtances, and vinegar, ſtrong beer grounds, and the like; and the cataplaſm made with ſaturnine water appears very well calculated for this purpoſe. Theſe applications will be found much preferable to ſpirituous and aſtringent fomentations; which by hardening and contracting the fibres, tend to increaſe

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the inflammation of the ſurrounding parts, and counteract the operation of nature in throwing off the mortified fleſh. But when a ſpreading gangrene comes on from an internal cauſe, a different topical treatment will be requiſite; though indeed very little is to be expected from external remedies of any kind. Theſe uſually happen in dropſical and leucophlegmatic habits, or in extreme old age, and ſhow a debility and want of power in the ſolids to carry on the animal functions. In ſuch caſes the diſeaſe can hardly be conſidered as topical, and ſeparation of the affected part cannot be procured without giving a general vigour to the vital powers. As the fibres are already too much relaxed, emollients of every kind are certainly to be avoided, and the warmeſt ſtimulants and moſt powerful antiſeptics are indicated. Much more effectual and ſuitable applications than ſaturnine topics may be thought of for this purpoſe; ſuch particularly as ſpirituous and terebinthi-

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nate medicines, and all the natural vegetable balſams.

It may be proper here to add a word or two concerning ſchirri, which, as we before obſerved, cannot indeed be conſidered as one of the terminations of inflammation, yet are a good deal connected with it. I wiſh it was in my power to ſecond the ſanguine hopes Mr. Goulard conceives of ſaturnine topics in theſe caſes; but neither reaſoning nor experience ſeem to confirm them. With reſpect to the diſſolvent power of lead, on which he relies ſo much, what has been ſaid in a former chapter concerning its penetrability will ſerve, if juſtly founded, to leſſen our expectations from this ſuppoſed quality. And if ſchirri generally depend upon ſomething conſtitutional, as I believe may be ſafely aſſerted, there will be ſtill leſs reaſon to hope for a cure from external remedies. I have frequently ſeen Mr. Goulard's topics tried in theſe caſes, but never with any ſtriking efficacy; and if a remarkable cure ſhould ſometimes

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happen from their uſe, it would ſeem to me more rational, to attribute it, either to the friction employed in rubbing in the ſoap ointment, or to ſome tonic power communicated ſympathetically to the fibres of the affected part, from the outward application of an aſtringent, than to any ſpecific property in the particles of lead.

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## SECTION II.

## On Ulcers.

AN inflammation, terminating in ſuppuration or gangrene, produces an ulcer.

WHEN the inflammation has been owing to external injury in a ſound ſtate of the body, the healing of an ulcer is merely a work of nature, and requires little or no aſſiſtance from art. All that is to be attempted by topical applications, is to maintain the fibres in ſuch a moderate ſtate between laxity and rigidity, as will render them moſt able to carry on this natural operation. As long as the inflammatory hardneſs ſubſiſts, emollients, particularly in form of cataplaſm, anſwer extremely well. They gently ſoften the ſolids, and produce a mild ſuppuration, free

free from a putrefactive tendency. Afterwards, dry lint, and moderate aſtringents will be adviſeable, to give a tone to the new fleſh; and the ſaturnine water may be uſefully applied for this purpoſe. A prudent uſe of theſe means, with great cleanlineſs, and cautiouſly avoiding every cauſe of putrefaction, will in general render this part of ſurgery eaſy and ſucceſsful. But the great difficulties attending the treatment of ulcers, ariſe from their connection with general diſeaſes of the ſyſtem; and to this is owing their many different appearances and complicated ſymptoms.

WE may remark concerning ſuch ulcers in general, that little dependance is to be had on external remedies alone of any kind. The particular vice of the habit muſt be firſt corrected by ſuitable internal medicines, before any important change can be effected by topical applications. Nevertheleſs, as external treatment will very much influence the cure of ulcers, according as it is appropriated to

their particular ſtate, it will be worth while to enquire into the principles upon which it is founded.

THE circumſtances to be attended to in the appearance of ulcers, are, the ſtate of the ſurrounding fleſh, and the condition of the diſcharge.

THE moſt common fault of the lips or margin of an ulcer is calloſity. This in a particular manner attends ſome kinds of ulcers from an internal cauſe, as the venereal and cancerous. Thoſe ulcers of the legs alſo which have been much neglected, though at firſt proceeding from an external cauſe, as well as thoſe which come ſpontaneouſly in a depraved habit of body, are extremely ſubject to calloſity. In ſuch caſes, the hardneſs of the fibres prevents that ſhooting out, and elongation of the vaſcular parts, which is neceſſary to the production of new fleſh. It has long been a common practice to treat all calloſities with eſcharotic medicines; but this method has been juſtly exploded by ſome of our beſt late writers, as tend-

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ing to increaſe the diſeaſe by the continual inflammation it excites, and to render the veſſels ſtill more impervious and incapable of acting.

WELL choſen emollients aſſiſted by gentle warmth, ſeem the beſt calculated to anſwer every indication of a callous ulcer. Without bringing on any deſtruction of the ſolids, they produce ſuch a gradual change in their texture, as brings them to that due ſtate of tenſion which is the moſt favourable for their action; and by enlarging the diameter of the veſſels, they give admiſſion to the nutritious juices neceſſary for the generation of new fleſh. This effect of emollients is plainly demonſtrated from the luxuriant fungus brought on by their uſe, which though it frequently requires ſuppreſſion in order to bring the ſkin over it, yet in ſome degree or other is a neceſſary ſymptom in a healing ulcer. By the uſe of a ſimple poultice, and a reclined poſture ſtrictly obſerved, I have often ſeen the moſt unpromiſing and formidable ulcers of the

legs heal kindly, with very little aſſiſtance from internal medicines. I have obſerved with great pleaſure the opaque callous edges gradually ſoften and change colour, and beautiful ramifications of the arteries appear ſpreading through them, giving an evident proof to the ſenſes of the natural progreſs of healing, and the propriety of emollient applications to aſſiſt it. This will ſeem extremely difficult to reconcile with Mr. Goulard's idea of the efficacy of ſaturnine topics in theſe caſes; with regard to which he goes ſo far as to alledge that they are as ſpecific in the cure of callous ulcers, as mercury for the venereal lues. He grounds this aſſertion upon the ſuppoſition of a remarkable diſſolvent power in lead, which however I have not been able either theoretically or practically to diſcover; and if his obſervations ſuffice to prove great ſucceſs in the treatment of ulcers of this kind, I would attribute it to the application of his topics in form of cataplaſm, in which, from the warmth and quantity of aqueous fluid,

fluid, a conſiderable emollient power will probably reſide. Conſidered as mere aſtringents, I think we may very ſafely aſſert that they cannot be favourable to the diſſolution of calloſity.

A FAULT entirely oppoſite to calloſity, is a flabby, ſpongy texture of the fleſh ſurrounding an ulcer. This frequently happens in languid, relaxed conſtitutions, and is almoſt the inſeperable attendant of ſcrophulous ulcers. In this caſe the natural operation of incarning goes on very ſlowly, and the ulcer remains for a long time in the ſame ſtate. The manifeſt indication here is to ſtimulate and brace the inſenſible and inactive fibres, and emollients are as improper, as they are ſuitable in the former caſe. Aſtringents and ſtimulants of almoſt every kind will ſupply their place with advantage, and among the reſt ſaturnine topics in the form of the ſaturnine water, or the pure extract, may be uſefully applied. Yet in many caſes remedies that have a ſtimu-

lant as well as aſtringent property will ſucceed better.

The diſcharge from an ulcer may be faulty in ſeveral reſpects; but as moſt of theſe are conſequent upon diſeaſes of the ſolids, and will of courſe be remedied in proportion as they are, we cannot properly have an eye to them in topical applications. We have only to conſider the action of topics upon the fluids already diſcharged, and ſtagnating on the ſurface of an ulcer, and in this view the correction of acrimony ſeems to be our ſole object. Acrimonious matter may be produced in two ways; either from good pus running into putrefaction, or from an internal diſeaſe in the fluids, which gives them an acrimony when firſt diſcharged.

As every animal juice, ſtagnating and expoſed to a conſiderable warmth and the contact of the air, is ſtrongly inclined to become putrid, we ſhould be particularly careful to correct this diſpoſition in the dreſſings of an ulcer. I have formerly remarked the propenſity of oily ſubſtances

ſtances to contract a putrid rancescency, and to increaſe the putrefaction of the animal fluids. Practitioners in many caſes have been ſenſible of this, yet in others they ſeem to have forgot it. The uſe of oily applications in caries, that is ulcers, of the bones has long been condemned; and in eryſipelatous inflammations their bad effects have been juſtly dreaded. Yet in various caſes where the putrid diſpoſition is equally ſtrong, they are ſtill in daily uſe. Where emollients are indicated, warm farinaceous poultices offer an innocent and a more efficaceous form; and from attentive obſervation I am convinced, that if the application of oily and greaſy dreſſings to the naked fleſh of an ulcer was in every caſe totally prohibited, ſurgery would gain much more than it would loſe. In general, ſoft dry lint changed ſufficiently often will prevent any miſchief from ſtagnation; yet if there be a peculiarly ſtrong tendency to putrefaction, as in carious ulcers, antiſeptics are certainly indicated,

and the ſaturnine water of Mr. Goulard is a very uſeful medicine of this claſs. As the corroſive acrimony of the diſcharge frequently excites great pain, the ſedative quality of ſaturnine topics will make them more ſuitable than the ſtimulant antiſeptics or common aſtringents.

Ulcers which have a peculiar acrimony in their diſcharge, are principally thoſe from the venereal and cancerous virus.

For the firſt of theſe, we are furniſhed with a real antidote in mercury, and accordingly mercurial preparations topically applied have the ſanction of practice in theſe caſes. Yet as the general uſe of mercury is always combined, and our great dependance is upon this alone, I am inclined to think that the uſual indications for ſuitable topics ought to take place of the ſpecific indication for mercury. Indeed mercurial preparations are ſo various, that ſuitable topics may be choſen from them in almoſt every ſtate of a venereal ulcer, but if there was rea-

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ſon to think in any caſe that different applications would ſuit the ſtate of the ulcer better, I ſhould not heſitate to give them the preference. And as the ſaline preparations of mercury are ſtimulant, whereas thoſe of lead are ſedative, perhaps the latter may be more advantageouſly employed in irritable habits, and where the ulcer is attended with much pain.

CANCEROUS ulcers are the moſt melancholy of all the diſeaſes to which the ſurgeon is called. Neither art nor nature can ſtop their dreadful ravages, and a man of humanity finds himſelf in the painful ſituation of being a witneſs to afflictions which he knows are not to be removed. Still however ſomething may be done to palliate and alleviate. External applications in theſe caſes ſhould be calculated to correct the acrimony of the diſcharge, and to mitigate the acute pains in the part; or rather only the former, ſince the ſole cauſe of pain perhaps which topical remedies can relieve, is the corroſive

roſive matter preying upon the naked fibres.

The uſual dreſſings for a cancer, are the moſt mild and ſimple ointments; and indeed if oily ſubſtances ſeemed to poſſeſs a property of ſheathing the cancerous venom, like that of a viper, their application would be proper. But practice ſhows us nothing of this; and as a high putrid tendency accompanies the diſcharge, which according to what has been before obſerved ſhould be increaſed by every thing oily, I imagine the indication for antiſeptics is more important. Of theſe, the ſaturnine water, made very dilute and with little or no ſpirit, ſeems extremely well calculated for the purpoſe, and its ſedative property may give an additional advantage.

Mr. Goulard indeed has very ſanguine expectations from ſaturnine topics, not only for the palliation, but the radical cure of cancers. I have before endeavoured to ſhow how little adequate theſe applications are to the reſolution of a ſchirrus;

ſchirrus; and theſe arguments will weigh ſtill more againſt their efficacy in cancers, which are confeſſedly in great meaſure conſtitutional. The very few obſervations related of the cure of cancers by this method, are ſo extremely equivocal, that only one of them deſerves much attention, and it is preſumed, after ſuch repeated and unexpected diſappointments in this particular diſeaſe, the public will expect much ſtronger proofs before they give credit to the efficacy of any new remedy. At preſent I cannot expreſs my ſentiments on this head, ſo well as in the words of that very candid and judicious ſurgeon Mr. Pott, by whoſe free and unprejudiced ſpirit the art has been ſo much benefited. "As I do not know what "will cure a cancer, I leave the diſcuſſi-"on of this to thoſe who ſay that they do; "moſt ſincerely wiſhing that it was in "my power to ſay, that I had, once in "my life, known them to have fulfilled "their promiſe."

IF a cure for cancers be ever diſcover-

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ed, we have reaſon to think that it will not be in a topical remedy; for how can any external application do more in removing the cancerous virus, than an operation which at once takes away all the affected part? Yet we ſee that even this is very rarely attended with laſting ſucceſs.

With regard to ſcrophulous ulcers, I can ſpeak of their treatment with the full confidence of a very extenſive experience. This has convinced me, that emollient applications of all ſorts are highly improper and injurious. By weakening the ſolids already too much diſpoſed to relaxation, they prevent all endeavours of nature to bring about a firm incarnation; and by giving the fluids an acrimony, to which in this diſeaſe they are not remarkably diſpoſed, they occaſion a kind of eryſipelatous corroſive ſpreading of the ſore, which often makes a caſe, at firſt trifling, appear truly formidable. The miſchiefs of this practice are ſtill more clearly ſhown, by the ſpeedy change produced

duced by almoſt every kind of topics of the oppoſite claſſes, the aſtringent and ſtimulant. The moſt ſimple of theſe, cold water, has frequently a very good effect, on throwing aſide every dreſſing and waſhing the ſores with it. The Malvern waters in Worceſterſhire, much celebrated in ſcrophulous caſes, are acknowledged to act externally and internally, merely as a very pure cold water. Water with every kind of ſaline and mineral impregnation, is alſo uſed to advantage, and in particular ſea water has been found very beneficial. I have ſeen Mr. Goulard's ſaturnine water employed in a very great number of theſe caſes, and with a manifeſt advantage over all emollient topics, but without any peculiar efficacy above others of the aſtringent and antiſeptic claſs. With regard to the ſaturnine ointments of Mr. Goulard and others, I conceive their good effects, as preparations of lead, to be over ballanced by their injurious effects, as greaſy applications, in all caſes where emollients are prejudicial.

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## SECTION III.

## On Anchyloſes.

VARIOUS are the cauſes which may deſtroy or impair the mobility of a joint. One of theſe, the coalition of the oppoſite bones by oſſeous matter, is juſtly reckoned among thoſe diſeaſes which in their nature are abſolutely incurable; and in moſt of the others, the operation of remedies is extremely precarious and uncertain, on account of the difficulty of coming at the ſeat of the diſorder. Neither in many caſes are we clear with reſpect to the part affected; and there are few diſeaſes in which we have been more amuſed with hypotheſes concerning the cauſe, founded merely upon conjecture. Of this kind ſeems to be the notion of inſpiſſation of the ſynovia, which ſome of the

the beſt anatomiſts in our times conſider merely as the ſuppoſition of profeſſed theoriſts willing to account for every thing, without the ſupport of any authentic obſervations. Yet it is upon the imginary diſſolvent power of ſaturnine topics in this ſuppoſed cauſe of anchyloſis, that Mr. Goulard's application of them in theſe caſes appears to be founded.

THE moſt ſimple caſe of a ſtiff joint, is that which is conſequent upon long continued confinement of a limb in one poſture, as frequently happens in the treatment of a fracture. The vulgar expreſſion to deſcribe this diſeaſe, is that the joint is ſinew-grown; and it is not the only inſtance where illiterate perſons, judging merely from external appearance, have decided better than thoſe who have carried their reſearches deeper. The evident rigidity of the tendons in theſe caſes, juſtifies the idea of their being the ſeat of the diſeaſe; whereas the notion of inſpiſſation of the ſynovia does not ſeem conſonant to what we conceive of the uſe

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and nature of this fluid. Its uſe is ſuppoſed to be counteracting the effects of violent friction, and for this purpoſe its ſecretion muſt be proportional to the motion of the joint, and influenced by it. Therefore when the joint is perfectly at reſt, in all probability little or none of the liquor is generated. Neither does the ſynovia appear to be a fluid very ſuſceptible of coagulation or inſpiſſation from ſtagnating, much leſs ſo than the ſemen, which yet is never found inſpiſſated much beyond the uſual degree, though ſtagnating ever ſo long in the ſeminal veſicles.

A STIFF joint is frequently the conſequence of external injury, as a violent contuſion. Here there can be no pretence to accuſe the ſynovial liquor, as the ſuddenneſs of the complaint, and ſenſibility of the joint, plainly ſhow the cauſe to be an inflammatory affection of the ligaments. Arthritic, and rheumatic humours falling upon the joints, and impairing their mobility, ſeem likewiſe to affect the ligaments, from their tendency

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to attack other ligamentous and membranous parts, and from the painful tumefaction they excite.

BUT the moſt frequent and dangerous ſpecies of anchyloſis is that melancholy diſeaſe called a white ſwelling, which I believe is always owing to the ſcrophulous virus. I have diſſected many of theſe joints after amputation, but have never found the leaſt appearance of an inſpiſſated ſynovia, gluing, as it were, the ends of the bones together. In all of them there was a great thickening of the ligaments, confounding the ſeveral parts, ſo that they could ſcarely be known; together with collections of crude matter forming ſinuſſes through this undiſtinguiſhed maſs, and generally eroſion of the articular cartilages and ends of the bones.

WHERE a ſtiff joint proceeds merely from rigidity of the tendons, nothing can be more evident than the indication for emollient topics. Every remedy of this claſs may be uſefully employed; but unctuous liniments aſſiſted by warmth and

friction ſeem the beſt adapted, and the mucilaginous oil obtained from certain animal ſubſtances, called neats-foot oil, appears to ſucceed as well as any artificial combinations that can be contrived.

WHERE an inflammatory ſtate of the ligaments ſeems to occaſion immobility of the joint, it ſhould be treated with remedies proper for the reſolution of inflammation in a deep ſeated part; which I have before attempted to ſhow are rather thoſe of the aſtringent and ſtimulant, than the emollient claſs. The antiphlogiſtic power of ſaturnine preparations may give them place in theſe caſes, but perhaps more active medicines are generally requiſite to reach the cauſe. Bliſters, which have the ſanction of experience in deep ſeated inflammations beyond any topics we are acquainted with, have been frequently employed with ſucceſs in recent anchyloſes; and in all probability their action was the diſcuſſion of inflammation in the ligaments. This is an event we are with the utmoſt aſſiduity to promote,

promote, ſince the dreadful conſequences of ſuppuration in a joint are known to every ſurgeon. We muſt therefore condemn as dangerous trifling, the uſe of any means leſs powerful than others we are acquainted with.

WHEN the caſe is become more inveterate, and the rigidity of the joint habitual, we ſhall find ourſelves much at a loſs for remedies which we can depend upon. There are a few inſtances of a cure being affected by means of a ſtream of warm water falling on the joint from a height. This application the French call *la douche*, and it is much more in uſe there than in this country.

MR. Le Dran's Obſervations in Surgery, afford two remarkable caſes of its efficacy (Obſ. 93 and 94) to which is ſubjoined, a theoretical expoſition of its action; but like moſt attempts to account for the operation of medicines, it is rather ſpecious than ſatisfactory. In all the inſtances Mr. Goulard brings of the ſucceſs attending ſaturnine applications in

anchyloſes, we find the chief remedy was a *douche* of the ſaturnine water; and I think we may very ſafely infer that this produced its effect, merely as warm water applied in a peculiar mode, and not as a preparation of lead. I am ſtill further convinced that his obſervations prove no ſpecific power in lead againſt this diſeaſe; ſince the only ſaturnine preparation which he uſed in concert with the *douche* was the ointment with ſoap, which, as was before obſerved, can ſcarcely contain a particle of lead in an active ſtate.

With regard to ſcrophulous affections of the joints, they are as deſperate caſes as any in the whole practice of ſurgery. Even from the very beginning they ſeem to reſiſt every remedy, and though topics of every claſs have had their trial, all have proved entirely inadequate to the deſired effect. I am ſorry to ſay, from an extenſive obſervation of this diſeaſe, that when it was arrived to any conſiderable height, I have never ſeen topical applications of any manifeſt ſervice whatever.

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I have been witneſs to the uſe of Mr. Goulard's medicines in theſe caſes, much more than he himſelf appears to have been; and the utmoſt I can ſay in their favour is, that when the joint has ulcerated externally, their antiſeptic power renders them as good palliatives as any we can uſe, and much preferable to emollients. But till ſome general remedy be diſcovered for the ſcrophulous virus, we muſt, I fear, deſpair of expelling it from a joint which it has once attacked; and amputation, though juſtly proſcribed by ſame late writers in many caſes of external injury, will keep its place in this diſeaſe, as the only certain palliative, and very frequently the radical cure.

WITH regard to ſtrains, and relaxation of the ligaments, there ſeems to be no doubt of the preference due to aſtringents of any kind above emollients, which are certainly oppoſite to every indication of cure. However the common application of vinegar and brandy, uniting a ſtimulant with an aſtringent property, ap-

pears to rank higher in efficacy than a ſimple aſtringent.

One can ſcarcely forbear ſmiling, to ſee incomplete luxations put among thoſe diſorders which ſaturnine topics are expected to cure—certainly Mr. Goulard can only mean to recommend their antiphlogiſtic virtue, in the contuſion and inflammation attending this accident.

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## SECTION IV.

## On the Herpes and Itch.

THE idea of an intimate connexion between cutaneous eruptions, and internal depravation of the fluids, is of very antient date among the articles of medical belief, and it appears to be one of thoſe opinions, which, from a ſort of implicit aſſent and veneration, have hitherto eſcaped that free examination, which it is the peculiar glory of the preſent age, to apply indiſcriminately, without regard to the perſonal authority with which any dogma is delivered. It would be an undertaking highly uſeful to the healing art, and well worthy the employment of a man of abilities, to proſecute a ſtrict and extenſive enquiry into the nature of theſe diſeaſes, and how far,

and with what limitation the principle of internal depravation may be admitted. I am ſenſible of my own inequality to the taſk, which would require great experience and minute inveſtigation; yet I will venture to offer a few remarks, which may tend to ſhew that there are in fact ſome errors in the common doctrines on this ſubject.

THERE is no ſtate of the human body in which the fluids can be conceived ſo pure and free from morbid impregnations, as that of an infant juſt born; yet as far as my acquaintance with medical authors reaches, I find that they univerſally impute the red eruption conſtantly attending this ſtate to an internal cauſe; and though experience has convinced practitioners that the cuſtom of purging is unneceſſary, yet the notion of the cauſe remains the ſame. But may not this appearance be much more ſimply and probably accounted for, by conſidering the great change of climate and atmoſphere, that the tender ſkin undergoes at this time,

time, from maceration in a liquor of the animal heat, to expoſure in air perhaps not half as warm ?—a change even in the adult body, capable of producing very viſible effects on the ſkin. A peculiar diſpoſition to cutaneous eruptions continues during childhood, which ſeems evidently connected with this tender ſtate of the ſkin, rendering it more liable to irritation from external acrimony. This is exemplified by the diſagreeable eruptions behind the ears, and ſpreading over the whole ſcalp, which are ſo frequent in children, and which, though in ſome caſes perhaps connected with particular habits of body, yet in all may be certainly produced by want of care and cleanlineſs, and therefore are not in general to be looked upon as conducive to health, or dangerous to be cured. There are various other eruptions which in like manner are the offspring of filth and neglect; and in general, cutaneous diſeaſes are moſt prevalent in thoſe countries, and amongſt that rank of people, where

where theſe occaſional cauſes moſt take place.

If we form our diſtinctions of cutaneous eruptions from varieties in their appearance, a great number of claſſes may be made, ſince the appearance is not exactly ſimilar in any two patients; but in a practical view numerous diſtinctions are unneceſſary and ſuperfluous, and almoſt the only circumſtance which requires attention is, whether the diſeaſe be merely local, or connected with internal depravation of the fluids. The ſame claſs of topics will apply almoſt univerſally for the cure of local cutaneous eruptions, and are as univerſally to be avoided when the eruption is beneficial by the diſcharge of morbific matter.

The cure of *herpes* by aſtringent and ſtimulant topics has long been familiar to practitioners, and a great latitude has been allowed in the choice. There is no reaſon to doubt of the efficacy of ſaturnine applications in this caſe; they have been celebrated both in antient and modern

modern practice in this and every other ſpecies of cutaneous eruptions; Mr. Goulard's obſervations amply confirm their uſe, and I can freely add my teſtimony. So far we may ſafely join him; but when we find him making a formal diſtinction of herpes into local, and connected with internal depravation, when he ſtrongly condemns the uſe of aſtringents in the latter on account of their repellent quality, but as highly extols ſaturnine topics, inventing an artificial theory of their action, repugnant to their obvious and ſenſible effects, we cannot in too ſtrong terms diſapprove of a hypotheſis that may become as dangerous as it is chimerical. If it be urged that his facts in reality prove the ſafety and efficacy of theſe topics in every kind of herpes, let us boldly make the more rational deduction, that this diſorder is in all caſes merely local, and that all aſtringents and repellents may be uſed with equal ſafety.

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The efficacy of ſaturnine topics in curing the itch, is much extolled by Mr. Goulard, and ſeems well confirmed by numerous obſervations. I have before taken notice of his apparent ignorance of the doctrine of animalculæ cauſing this diſeaſe, which yet is a circumſtance of moment with regard to its treatment. Various topics have from time to time been employed in the cure of the itch, particularly thoſe of the ſtimulant and aſtringent claſſes, both from the vegetable and mineral kingdom, but principally the latter. In all of theſe, except ſulphur, it has been found neceſſary to apply the remedy topically to every affected part; even mercury will ſcarcely cure unleſs this rule be obſerved, as inſtances are related of perſons paſſing through a ſalivation for the venereal lues, without obtaining a cure of the itch. Sulphur however proves effectual, when only rubbed into a ſmall ſurface of the ſkin, as the palms of the hands and ſoles of the feet, and therefore may be conſi-

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dered as a ſpecific for this diſeaſe. This is alſo a confirmation of the doctrine of animalculæ, ſince the deleterious effects of ſulphureous vapours upon all animals is well known, whereas its efficacy, as an internal medicine, is by no means conſiderable. Upon this principle, bleeding, purging, and alteratives, have been very much rejected from the cure of the itch in this country, and dependance has been ſolely had on the external uſe of ſulphur. The certainty of this remedy above mercury and all the common topical applications, is eſtabliſhed beyond diſpute, and in the preſent improved method of partial frictions, it is not very liable to the objections of an ill ſmell, and uncleanlineſs. It ſeems therefore very queſtionable whether it would be a real improvement in practice to reject ſulphur in favour of lead, which ſeems in this caſe to act merely like other topics of the ſame claſs, and requires, like them, a general application to the affected ſkin. We may eaſily conceive

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of circumſtances in which it will be inconvenient, and even dangerous to apply an aſtringent waſh to ſo large a ſurface, whereby perſpiration may be checked, and other accompanying eruptions, which it would perhaps be unſafe to repel, may be ſtruck in. In military hoſpitals particularly, it may often be neceſſary to treat a perſon for the itch, while under a mercurial courſe, a caſe in which there would be no doubt of the impropriety of the ſaturnine water.

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## SECTION V.

## On Herniæ.

TOPICAL applications of very different, and even oppoſite qualities, are recommended by authors to aſſiſt the reduction of herniæ; but in order to diſtinguiſh practice founded upon rational principles, from that which is merely empirical, it will be neceſſary to conſider the nature of the diſeaſe, and the ſtate of the parts concerned.

IN conſequence of ſome ſudden effort, part of the contents of the abdomen are forced through the interſtices left between the tendinous expanſions of the abdominal muſcles, for the paſſage of nerves and blood veſſels, and a tumour is formed which is called a hernia. This accident being unattended with rupture,

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or diviſion of the containing parts, the whole of the diſeaſe muſt at firſt be conſidered as a change of ſituation in the contained parts; and as ſuch, were they immediately returned and kept in their place, the diſeaſe would entirely ceaſe. But continuing in that preternatural ſituation, they are preſſed upon by the tendons through which they paſs, and the circulation of blood being obſtructed, inflammation and mortification ſpeedily ſupervene; which however is not owing to any change of ſtate in the tendons, but merely to their natural elaſticity, acting upon an increaſed and yielding ſubjacent bulk. The obſtacle to reduction of the prelapſed contents, is therefore the increaſed bulk which they have acquired from ſtricture, making them incapable of returning through the ſame paſſage at which they eſcaped. This is to be removed by ſuch remedies as cauſe the veſſels to contract, thereby diminiſhing the bulk of the ſolids, and repelling the fluids, and not by ſuch as expand the ſolids,

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and make them more yielding to the impulſe of the fluids. The former action belongs to cold, aſtringents, and ſtimulants; the latter to heat, and emollients. We are not to apply theſe laſt with a view of relaxing the tendons, ſince they have only their natural degree of tenſion, which can be very little altered by external applications of any kind. I have read a caſe (in what author I do not at preſent recollect) which will ſerve extremely well to illuſtrate this idea of herniæ. A boy having thruſt his penis through the ring of a key, it immediately ſwelled in ſuch a manner, that he could not get it off again, and alarming ſymptoms ſoon came on. The cure was performed by dipping the part in cold water, and certainly no body in this caſe would think of applying a warm poultice to relax the iron ring. It appears to me that not leſs abſurd is the application of emollients to relax the tendinous ring in a hernia; and it is to be obſerved that this treatment, if ineffectual for the pur-

poſe deſigned, muſt do great miſchief with regard to the indication reſpecting the hernial contents. Not only from this ſtrain of reaſoning, but from experience I would heartily join with Mr. Goulard in the ſubſtitution of cold aſtringents to warm emollients, as topical remedies for herniæ; and I have ſeen in particular his ſaturnine water eminently uſeful in aſſiſting reduction. Still greater confidence however would I place in the very gradual method of the taxis which he judiciouſly recommends. It is ſurprizing what may be done towards emptying overloaded veſſels by a gentle and continued manual compreſſion; and I cannot forbear relating an inſtance in which this effect is very happily demonſtrated.

FREQUENTLY in children, and ſometimes in adults, the prepuce, by friction, or ſome other external injury, becomes vaſtly tumified, and producing a ſtricture where the ſkin is attached to the root of the glans, occaſions a troubleſome and alarming paraphimoſis. Among ſeveral uſeful

uſeful leſſons, in points of practice where books give little aſſiſtance, which I learnt under Mr. White of Mancheſter, was a very ſimple and ſucceſsful method of treating this accident by a gradual, patient, and gentle compreſſion of the tumefied ſkin with the fingers, aſſiſted with ſmall bolſters of ſoft linen, which, as the tumour is rather of the ſerous and ædematous, than of the phlegmonous kind, may be ſo managed as to give little pain. On continuing theſe efforts for ſome time, the veſſels become viſibly leſs diſtended, the ſwelling grows flaccid, and at length the ſtricture gives way, and the diſorder is terminated. A ſimilar method is to be obſerved in thoſe prolapſus ani, which from their bulk are not eaſily reduced, and become ſtrangulated. In all theſe caſes it is egregious trifling to wait for the effect of topical applications, which can only perform in a very inconſiderable degree, what manual operation does compleatly.

## SECTION VI.

## On the Action of Bougies.

THE cauſes aſſigned to obſtructions in the urethra are ſo various, and ſo little certainty has been obtained with regard to them, even from anatomical enquiries, that we need not wonder at the variety of opinions concerning the action of remedies in removing them. The remarkable efficacy of bougies is acknowledged on all hands, yet much obſcurity prevails concerning their mode of action, and conſequently the moſt ſuitable forms of their compoſition. Mr. Daran, who has probably made a more extenſive and ſucceſsful uſe of theſe remedies than any man in Europe, has rather involved the matter in greater obſcurity, than thrown any new light upon it,

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by keeping his compoſition ſecret; rather chuſing to acquire wealth under the unworthy character of an empiric, than juſt reputation in his profeſſion under that of a candid and ingenious ſurgeon. He has however publiſhed his opinion of the mode of action of his bougies, in which he chiefly attributes to them a ſuppurative quality. Mr. Goulard on the other hand, who has extended the uſe of preparations of lead to the compoſition of bougies, conceives the action of his ſaturnine bougies to be that diſſolvent and diſcutient power, which in every inſtance he ſo warmly arrogates to his favourite metal. Mr. Sharp, who has written with great candour and judgment on this ſubject, ſeems cautious of advancing any thing poſitively concerning the action of bougies, yet rather inclines to the idea of their acting by compreſſion, and in ſome meaſure alſo by ſuppuration. The compoſitions which he gives for bougies, and thoſe in common practice among us, are chiefly mercurial, which doubtleſs

were firſt thought of on account of the venereal affection, of which diſeaſes of the urethra are ſo frequently the offspring. In order to eſtimate properly the validity of theſe different opinions, let us attend to the following facts.

Mr. Daran pretends to a ſpecific action in his ſecret, very different from, and ſuperior to that of any other kind of bougies.

Mr. Goulard, without attempting the leaſt proof that his ſaturnine bougies are ſimilar to Daran's, ſeems willing to allow the excluſive excellence of theſe, only ſtipulating for an exception in favour of his own.

Mr. Sharp clearly ſhows, and daily practice in this country evinces, that bougies of various ſorts are ſucceſsful, and nearly equally ſo, if uſed with equal manual ſkill; inſomuch that it is common for our beſt ſurgeons to commit the care of making them to the inſtrument-makers, being little ſolicitous concerning the ingredi-

gredients, if they be exact in form and texture.

FROM hence we may infer, that ſince bougies of very different compoſitions ſucceed in the cure of diſorders in the urethra, they do not act by means of any peculiar qualities in their compoſition, but by means of ſome property common to all.

THIS muſt be their mechanical form and texture; and therefore their mode of action muſt probably be, ſimple compreſſion.

THE efficacy of mere compreſſion in many caſes of conſtriction is well known, as in the uſe of ſponge tents to open a callous ſinus, to widen a natural paſſage, as the rectum or vagina, when ſtreightened by cicatriſes. Now admitting the moſt probable cauſes of obſtructions in the urethra to be a conſtriction from cicatrized ulcers, and projection of the ſpongy ſubſtance of the urethra into the canal (which among the various opinions on this ſubject ſeem in fact the beſt authenti-

thenticated) we may eaſily conceive that a gentle, continued, elaſtic compreſſion will in time overcome the diſeaſe. We may readily account for the inferior efficacy of metallic or whalebone bougies, from their not having the property of ſwelling with moiſture, and therefore not making ſo equal a compreſſion. With regard to the effect of bougies in procuring a diſcharge of matter, there is no queſtion but the mechanical ſtimulus of a foreign body in ſuch a tender part, though free from diſeaſe, muſt produce it in ſome degree, and that this will be varied according to the chemically irritating quality of the compoſition, and the irritable ſtate of the urethra; but it ſeems an abſurdity of practice to apply a topic made uniform throughout, to the whole length of a canal, with a view of producing extraordinary effects upon a particular part of it, by means of ſome powerful quality in the ingredients. It is not difficult to account for the appearance, obſerved in the uſe of bougies, of that

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part being more covered with matter which was in contact with the diſeaſed portion, ſince the diſeaſe will probably render it more ſuſceptible of irritation.

ON the whole we may allow Mr. Goulard to rival Daran in his bougies, without ſubſcribing to the violent degree of ſelf approbation he aſſumes from it; and I ſee no reaſon for ſuppoſing either the ſecret of the one, or the ſpecific of the other, at all preferable to the candid and unaſſuming varieties of compoſition propoſed by Mr. Sharp, and admitted in common practice.

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# CONCLUSION.

WE have now gone through an examination of the properties of ſaturnine topics, both in a general view, and in many particular caſes in which their virtues are celebrated by Mr. Goulard. In looking over his catalogue however, the reader will find ſeveral which I have totally omitted. My reaſons were, either that the ſimilarity of theſe caſes with others before treated of rendered it very obvious what judgment to form, or that they appeared too trifling to require particular notice. Of the former kind are the numerous claſſes of inflammations diſtinguiſhed by their cauſes, or the parts occupied by them. It will be very eaſy to refer theſe to what is ſaid of inflammation in general, with its three terminations, and the indications to be obſerved in each.

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ALTHOUGH a review of Mr. Goulard's book has ſerved me as a ground work for the obſervations which ſeemed worthy of offering to the public, it would, I apprehend, be a too limited view of my deſign, to conſider this little pamphlet merely as a piece of criticiſm upon an author, whoſe reputation, though in his own country it may have attained an eminent rank, yet in this, has not acquired ſuch diſtinction as to render the canvaſſing his merit an intereſting object. The plan I have gone upon, has been to lay down certain principles, which though here particularly applied to ſaturnine topics, may be capable of application to topical remedies of all kinds; and if the public are pleaſed to approve of the deſign upon which this piece is executed, I may poſſibly be induced to purſue it to its full extent, and to attempt a work never yet performed, in an improved and ſcientific manner, a general treatiſe on the external applications uſed in ſurgery. Great improvements have, no doubt,

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been made by late writers, eſpecially of our own country, in particular points relative to this part of ſurgery; and that taſte for ſimplicity which has wrought ſo great a reformation in the pharmaceutical part of internal medicine, has alſo extended its influence to external remedies. But I cannot help thinking that a methodical ſyſtem is ſtill wanting, to bring this branch of our profeſſion near to that certainty and perfection, which the operative part has in a great meaſure required; and I have a ſtriking remembrance, how much my thoughts on this ſubject were embaraſſed, when I began my ſtudies in ſurgery.

For the preſent, and any future attempt, I would beſpeak the candour of the reader in favour of one, who, while it is his aim to afford inſtruction, will at all times moſt willingly receive it, even though the purport of it ſhould be to ſhow him his own errors.

*The* E N D.